tions, such as landing and takeoff. This enables desired engine operation over a range of flight conditions with respect to engine performance and other engine operational parameters such as noise level. In one example, the flow control device **41** defines a nominal converged position for the nozzle exit area **40** at cruise and climb conditions, and radially opens relative thereto to define a diverged nozzle position for other flight conditions. The flow control device **41** provides an approximately 20% change in the nozzle exit area **40**.

[0016] In one example, the flow control device **41** includes multiple hinged flaps **42** arranged circumferentially about the rear of the fan nacelle **34**. The hinged flaps **42** can be actuated independently and/or in groups using segments **44**. In one example, the segments **44** and each hinged flap **42** can be moved angularly using actuators **46**. The segments **44** are guided by tracks **48** in one example.

[0017] A controller **50** is programmed to command the flow control device **41** to effectively change the nozzle exit area **40** for achieving a desired engine operating condition. In one example, sensors **52**-**60** communicate with the controller **50** to provide information indicative of an undesired engine operating condition. In the example shown in FIG. **2**, the controller **50** commands actuators **46** to move the flaps to physically increase or decrease the size of the nozzle exit area **40**.

[0018] In the examples shown, the engine **10** is a high bypass turbofan arrangement. In one example, the bypass ratio is greater than 10:1, and the turbofan diameter is substantially larger than the diameter of the low pressure compressor **16**. The low pressure turbine **18** has a pressure ratio that is greater than 5:1, in one example.

[0019] The gear train **22** is an epicyclical gear train, for example, which is shown in FIG. **3**. In one example, the epicyclical gear train is a star gear train, providing a gear reduction ratio of greater than 2.5:1. The gear train **22** includes a sun gear **70** that is coupled to the low spool **14**. Star gears **72** surround and mesh with the sun gear **70**. The star gears **72** are fixed against rotation about the sun gear **70** by rotationally supporting the star gear **72** with structure grounded to the core nacelle **12**. A ring gear **74** surrounds and meshes with the star gears **72**. The turbofan **20** is driven by and connected to the ring gear **76**. Thus, gear train **22** rotationally drives the turbofan **20** at a slower speed relative to low spool **14**. As a result, a lower pressure ratio across the turbofan **20** can be attained, which provides greater fuel efficiency. Further, the slower speed of the turbofan **20** as compared to the low spool **14** requires less structural reinforcement than direct drive turbofan engines due to the lower fan blade tip speed. Moreover, additional compressor and turbine stages can be eliminated since the low spool **14** can rotate faster than the turbofan **20**.

[0020] It should be understood, however, that the above parameters are only exemplary of a contemplated geared turbofan engine. Although an example embodiment of this invention has been disclosed, a worker of ordinary skill in this art would recognize that certain modifications would come within the scope of this invention. For that reason, the following claims should be studied to determine the true scope and content of this invention.

1.-**18**. (canceled)

19. A turbofan engine comprising:

a fan nacelle surrounding a core nacelle that houses a spool, wherein the spool is a low spool, the core nacelle houses a high spool rotatable relative to the low spool, and a low pressure compressor and turbine are mounted on the low spool, the fan and core nacelles providing a bypass flow path having a nozzle exit area;

a turbofan arranged within the fan nacelle upstream from the core nacelle;

a flow control device adapted to effectively change the nozzle exit area to obtain a desired operating condition for the turbofan engine; and

a gear train coupling the spool and turbofan for reducing a turbofan rotational speed relative to a spool rotational speed.

20. The turbofan engine according to claim **19**, wherein the flow control device includes a controller programmed to effectively change the nozzle exit area in response to a condition detected by at least one sensor indicative of an undesired operating condition to obtain the desired operating condition.

21. The turbofan engine according to claim **20**, wherein the controller commands an actuator to physically change a size of the nozzle exit area.

22. The turbofan engine according to claim **19**, wherein the gear train is an epicyclical gear train.

23. The turbofan engine according to claim **22**, wherein the epicyclical gear train is a star gear train.

24. The turbofan engine according to claim **19**, wherein a high pressure compressor and turbine are mounted on the high spool.

25. A turbofan engine comprising:

a fan nacelle surrounding a core nacelle that houses a spool, wherein the spool is a low spool, the core nacelle houses a high spool rotatable relative to the low spool, and a low pressure compressor and turbine are mounted on the low spool, the fan and core nacelles providing a bypass flow path having a nozzle exit area;

a turbofan arranged within the fan nacelle upstream from the core nacelle;

a flow control device adapted to effectively change the nozzle exit area to obtain a desired operating condition for the turbofan engine; and

an epicyclical gear train coupling the spool and turbofan for reducing a turbofan rotational speed relative to a spool rotational speed.

26. The turbofan engine according to claim **25**, wherein the flow control device includes a controller programmed to effectively change the nozzle exit area in response to a condition detected by at least one sensor indicative of an undesired operating condition to obtain the desired operating condition.

27. The turbofan engine according to claim **26**, wherein the controller commands an actuator to physically change a size of the nozzle exit area.

28. The turbofan engine according to claim **25**, wherein the epicyclical gear train is a star gear train.

29. The turbofan engine according to claim **28**, wherein the star gear train provides a gear reduction ratio of greater than 2.5:1.

30. The turbofan engine according to claim **25**, wherein the epicyclic gear train provides a gear reduction ratio of greater than 2.5:1.

31. The turbofan engine according to claim **30**, wherein the bypass flow path provides a bypass ratio greater than 10:1.

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